

# Identification of Flexible Human Resource Management Components and Examination of Its Impact on Operational Performance with the Moderating Role of Organizational Ambidexterity

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## ABSTRACT

**Objective:** The main objective of the present study was to provide a localized model of flexible human resource management for manufacturing companies in Iraq and to examine the impact of this variable on the operational performance of these companies.

**Methodology:** Therefore, the present research is developmental and was conducted using an exploratory-analytical approach. In the qualitative section, this study utilized the Delphi strategy, and in the quantitative section, it employed the survey strategy. The qualitative section's tool was a systematic review of the literature, and field data in the quantitative section were obtained using a questionnaire. Human resource management experts in Iraq were considered the statistical population for the first section, while human resource managers and experts in the manufacturing sector of this country were regarded as the statistical population for the second section.

**Findings:** Analysis of the opinions from a 20-member expert panel in the qualitative section led to the identification of six components of flexibility: operational, individual, skill, behavioral, temporal, and relational, for the concept of flexible human resource management. Additionally, the analysis of survey data obtained from a sample of 238 individuals confirmed the validity of this conceptual construct, and structural equation modeling demonstrated its significant impact on operational performance. Furthermore, the results of hierarchical regression analysis showed that organizational ambidexterity significantly moderates the effect of flexible human resource management on operational performance.

**Conclusion:** it is suggested to establish direct connections between organizational units like the research and development unit, which engage with the organization's learning capabilities, and the human resource unit. This way, the interaction between flexibility and learning will increase the organization's ability to explore and exploit innovation.

**Keywords:** Flexibility, Flexible Human Resource Management, Organizational Ambidexterity, Operational Performance, Manufacturing Companies

## 1 Introduction

Human resources are a central element in any organization, whether manufacturing or service-oriented, and their importance lies in the knowledge, capabilities, and skills of employees (Ahmed & Idris, 2021). Today, productive organizations view human resources as the most crucial factor for achieving their goals and realizing their strategic vision. The modern production environment is characterized by increased uncertainty and continuous change due to intense competition in both local and global markets, the emergence of time-dependent competition, shorter product and technology life cycles, and reduced delivery times. The uncertainty arising from changing customer needs and increasing product and service diversity constitutes the greatest challenge for any organization (Shah & Patki, 2020). These rapid changes in the business environment and shifting customer preferences have directed many researchers' interests toward flexibility as a competitive weapon. This competitive tool enables organizations to adapt to environmental events and stay informed of the necessary developments to improve performance and competitiveness in their respective markets (Parrado-Díez, 1997; Purwanto et al., 2014).

Competition in global and local markets no longer depends solely on cost, quality, and services but has shifted towards flexibility. Flexibility generally refers to the ability to change based on different conditions (Parrado-Díez, 1997), while human resource flexibility can be defined as the ability of the human resource management system to flexibly utilize current employee skills in various ways (through reconfiguration or altering human resource management practices) (Rudež & Mihalič, 2007). Human resource flexibility is considered a significant criterion for improving operational performance. Operational performance refers to the ability of the production system to efficiently utilize available resources and address internal and external environmental elements (Shah & Patki, 2020). Operational performance is a fundamental indicator that reflects an organization's ability to invest successfully in available material, human, technical, and informational resources. This type of performance encompasses a set of competitive priorities, such as quality, delivery speed, high flexibility, and low cost, enabling organizations to enhance their competitiveness (Bakir et al., 2020). Therefore, to remain in an increasingly competitive world, organizations must improve their operational performance whenever and wherever possible (Al-jawazneh, 2012).

Jurczak (2008) proposed an approach to enhancing an organization's human capital and improving its performance through human resources, based on the concept of organizational ambidexterity (Jurczak, 2008). Organizational ambidexterity, by effectively identifying intellectual assets, enables organizations to increase profitability and ensure survival. It facilitates achieving a balance between the dual tasks of exploring and exploiting resources and target markets, thus improving organizational competitiveness (Fu et al., 2016). Consequently, organizational ambidexterity and human resource management interact in terms of improving operational performance. Andriopoulos and Lewis (2009) argue that organizational ambidexterity is the ability of an organization to efficiently and effectively utilize market opportunities and work creatively by generating new ideas to meet market needs and face future market challenges. Existing studies emphasize the need for organizations to adopt ambidexterity due to its pivotal role in enhancing operational performance and ensuring long-term success and prosperity (Fu et al., 2016; Raisch & Birkinshaw, 2008).

In Iraq, particularly in the manufacturing sector, which bears the brunt of the country's economy, human resources have not been optimally utilized as the driving force of performance and a potential source of organizational ambidexterity (Al-Jobori & al-Baghdadi, 2015). Preliminary investigations by the researcher with manufacturing company managers indicated that the role of flexible human resources in manufacturing companies is rarely highlighted, with the widespread misconception that the concept of human capital generally applies only to service companies. Moreover, the routine deployment of individuals in general and repetitive roles in these manufacturing companies shows that employees have not been considered as a source for improving operational performance (Al-Frijawy et al., 2019). Field investigations by the researcher with employees of some selected companies also revealed that one of the motivational barriers for employees is the lack of flexibility in the human resource management system, and they view the unfulfilled potential of their capacities as a significant weakness of their respective companies. Official and organizational document reviews also showed that, almost without exception, flexible human resource management programs (such as job rotation, self-managed teams, etc.) have not been utilized in these companies. All these issues indicate the presence of a problem in the target research community, namely the lack of constructive alignment

between human resource management systems, operational, and leadership systems.

Therefore, primarily, the present study seeks to identify the fundamental factors on which flexible human resource management is based. In other words, by systematically reviewing the relevant literature, it aims to identify the indicators that, considering cultural differences, shape a localized model of flexible human resource management for Iraqi manufacturing companies. It then examines the impact of the identified factors within the concept of flexible human resource management on operational performance, with the moderating role of organizational ambidexterity. As Nuryaman (2015) noted, human resources are the necessary infrastructure for organizations to improve operational performance (Nuryaman, 2015). Considering internal and external competition, the Iraqi manufacturing sector is a critical area that should be studied, and any efforts to advance this sector require understanding all the aforementioned variables and using them to develop future perspectives for Iraq's manufacturing sector. This research is an effort based on a mixed methodology to identify the characteristics of flexible human resource management in the country's manufacturing sector based on past scientific heritage to avoid trial and error and to achieve empirical evidence that can transform the operational performance of companies active in this sector. In other words, this research attempts to help conceptualize the components of flexible human resource management by gathering existing literature through a systematic review, to measure their impact on the operational performance of companies in a survey study. Additionally, it considers the role of organizational ambidexterity in enhancing the effect of flexible human resource management on the operational performance of Iraqi manufacturing companies.

## 2 Methods and Materials

The present research, in terms of its orientation, is categorized as developmental research, and its governing paradigm is pragmatism; it seeks to understand how individuals interpret and give meaning to phenomena around them (qualitative research) and examine the impact of these meanings in practice (quantitative research). The qualitative analysis strategy in this study involves using a systematic review and the Delphi panel method, utilizing identified experts. The quantitative analysis strategy is a survey, and the quantitative analysis methods include structural equation modeling and hierarchical multiple regression analysis.

The qualitative section's study population comprises human resource management experts in Iraq who meet the following two criteria: 1) holding an academic specialization in human resource management at the master's or doctoral level, and 2) having five or more years of senior management experience in one of Iraq's manufacturing companies. In the qualitative section, the sample size, based on the judgmental method and the principle of theoretical saturation, was determined to be 20 individuals. The quantitative section's study population, with an organizational analysis level, consists of human resource managers and experts from Iraqi manufacturing companies, from which a random sample was studied. Based on an inquiry from the Ministry of Planning of Iraq, the number of private manufacturing companies in the country is 619, and a sample size of 237 was obtained based on the Morgan table. Given that the level of analysis is organizational, only one questionnaire was collected from each selected company to represent a single score for each company.

Qualitative data were collected through a systematic review process, consistent with the Delphi process and the prerequisites of the survey method. In other words, the qualitative section's tool is a library study of existing scientific sources. In the quantitative section, data were obtained using a questionnaire that combined standard and researcher-developed items: a 26-item tool developed in the qualitative section of the present study was used to measure flexible human resource management, organizational ambidexterity (with two components of exploration and exploitation) was measured using a 12-item scale (Lubatkin et al., 2006), and operational performance (with five components of customer service, cost management, quality, productivity, and asset management) was measured using a 10-item scale (Brix, 2019). This research, to validate the qualitative content analysis at the final stage of the systematic review, evaluated and confirmed the validity, transferability, reliability, and confirmability of the indicators derived from the literature. The validity of the quantitative data was also confirmed by examining construct validity and reliability.

## 3 Findings and Results

The first requirement for conducting a systematic review was selecting relevant keywords to ensure that, firstly, all existing studies would be included as much as possible, and secondly, irrelevant studies would be automatically filtered out during the internal refinement process. Accordingly,

several single and combined keywords, such as "flexibility," "flexible employees," "flexible human resource management," and "flexibility+human resources," were used to extract relevant studies from the literature. For explaining the summary table of extracted research, two main features were considered: firstly, the validity of the research (emphasizing the credibility of the journal and the number of citations by other studies), and secondly, the research context (emphasizing manufacturing organizations). Based on this, 74 studies were identified at this stage. Of these, 33 studies that matched the current research topic but either lacked credibility or had significantly different research contexts were excluded from the literature review process.

Therefore, the final sample included 41 studies. Additionally, 28 indicators were identified, which were ranked from most to least frequent (Table 1). These indicators should be examined in the specific environment of Iraq and its manufacturing organizations; therefore, all identified indicators must be presented to the Delphi experts. However, indicators with a frequency of one were excluded from the continuation of the process due to their lack of repetition in the literature. The remaining indicators were the basis for further examination within the Delphi process, ultimately to be used for constructing the components and conceptualizing "flexible human resource management."

**Table 1**

*Results of Systematic Literature Review*

Row	Identified Indicators	Reference Study	Frequency
1	Changing HR tasks and activities with changing business scenarios	(Beltrán-Martín et al., 2008; Beltrán-Martín et al., 2009; Bhattacharya et al., 2005; Boussourdi; Chen & Li, 2015; De La Lastra et al., 2014; Javed et al., 2017; Laidi et al., 2021; Martínez-Sánchez et al., 2011; Sabuhari et al., 2020; Sekhar et al., 2017a, 2017b; Wen et al., 2021)	17
2	Enhancing employees' abilities to increase the variety (breadth) and extent (depth) of new skills	(Beltrán-Martín et al., 2008; Beltrán-Martín et al., 2009; Boussourdi, 2022; Chen & Li, 2015; De La Lastra et al., 2014; Kalleberg, 2001; Karman, 2019; Sabuhari et al., 2020; Snell & Youndt, 1995; Snell et al., 1999; Wright & Snell, 1998; Yang & Gan, 2021)	15
3	Training employees to recognize appropriate behaviors in uncertain and ambiguous conditions	(Beltrán-Martín et al., 2008; Beltrán-Martín et al., 2009; Bhattacharya et al., 2005; Boussourdi, 2022; Chen & Li, 2015; Javed et al., 2017; Karman, 2019; Sabuhari et al., 2020; Wright & Snell, 1998; Yang & Gan, 2021)	13
4	Adjusting the number of employees (such as temporary or contingent workers) to quickly and effectively adapt to workload and demand changes	(Atkinson, 1984; De La Lastra et al., 2014; Huang & Cullen, 2001; Roca-Puig et al., 2008; Takeuchi, 2009; Volberda, 1999; Zhu, 2005)	10
5	Making rapid and continuous changes in HR activities to keep up with work demands	(Beltrán-Martín et al., 2008; Beltrán-Martín et al., 2009; Bhattacharya et al., 2005; De La Lastra et al., 2014; Takeuchi, 2009; Wang, 2019)	7
6	Combining and developing employees' abilities to be appointed to different jobs or departments within the organization	(Atkinson, 1984; Beltrán-Martín et al., 2008; Beltrán-Martín et al., 2009; Bhattacharya et al., 2005; De La Lastra et al., 2014; Wang, 2019; Yang & Gan, 2021)	7
7	Transferring and assigning employees to more qualified jobs in a short period	(Beltrán-Martín et al., 2008; Beltrán-Martín et al., 2009; Bhattacharya et al., 2005; De La Lastra et al., 2014; Wang, 2019; Yu et al., 2015)	6
8	Encouraging employees to continuously update their skills and abilities	(Beltrán-Martín et al., 2008; Beltrán-Martín et al., 2009; De La Lastra et al., 2014; Santos et al., 2009; Yang & Gan, 2021)	6
9	Adjusting workload with flexible working hours or part-time employees	(Atkinson, 1984; De La Lastra et al., 2014; Kang, 2023; Martínez-Sánchez et al., 2011; Takeuchi, 2009)	5
10	Encouraging employees to share information and learn from each other	(Atkinson, 1984; De La Lastra et al., 2014; Jia & Wang, 2012; Santos et al., 2009)	5
11	Flexibly adjusting payroll costs	(Bücker & Peters, 2019; Kalleberg, 2001; Laidi et al., 2021; Ponzellini, 1992)	4
12	Adjusting guidelines for different employee groups in a complementary way	(Delery & Doty, 1996; Karman, 2019; Snell et al., 1999; Wright & Snell, 1998)	4
13	Providing quick feedback to employees on the effectiveness of their new skills	(Karman, 2019; Snell & Youndt, 1995; Snell et al., 1999; Wright & Snell, 1998)	4
14	Encouraging employees to volunteer to identify the causes of problems	(Beltrán-Martín et al., 2008; Beltrán-Martín et al., 2009; De La Lastra et al., 2014; Yang & Gan, 2021)	4
15	Quickly teaching employees how to perform a specific task when they are unable to do so	(Beltrán-Martín et al., 2008; Beltrán-Martín et al., 2009; De La Lastra et al., 2014; Yang & Gan, 2021)	4
16	Predicting the skill needs for future tasks by employees	(Beltrán-Martín et al., 2008; Beltrán-Martín et al., 2009; De La Lastra et al., 2014; Yang & Gan, 2021)	4
17	Training and developing employees to perform specific tasks in a short period	(Beltrán-Martín et al., 2009; Schuler & Jackson, 1987; Takeuchi, 2009; Williamson & Rasmussen, 2020)	4
18	Training employees to take on responsibilities related to other jobs	(Beltrán-Martín et al., 2008; Beltrán-Martín et al., 2009; De La Lastra et al., 2014)	3

19	Training employees to quickly learn new procedures and processes introduced in the job	(Beltrán-Martín et al., 2009; Bhattacharya et al., 2005; De La Lastra et al., 2014)	3
20	Encouraging employees to exchange views with individuals and departments	(Beltrán-Martín et al., 2008; Beltrán-Martín et al., 2009; De La Lastra et al., 2014; Yang & Gan, 2021)	3
21	Quickly and effectively adapting to environmental changes through HR activities	(Bhattacharya et al., 2005; Laidi et al., 2021; Milliman et al., 1991)	3
22	Implementing methods to measure and simplify work to improve performance	(Schuler & Jackson, 1987; Takeuchi, 2009; Wang, 2019)	3
23	Reinforcing employees' proactive behaviors to adapt to abnormal conditions and events	(De La Lastra et al., 2014; Huang & Cullen, 2001)	2
24	Rewarding employees for punctuality in performing duties	(Laidi et al., 2021; Pawłowska, 2022)	2
25	Empowering employees to change short-term behavioral habits to meet environmental demands	(Bhattacharya et al., 2005; De La Lastra et al., 2014)	2
26	Holding regular meetings to share experiences and work processes applicable in other parts of the organization	(De La Lastra et al., 2014; Spreitzer et al., 2017)	2
27	Reinforcing employees to adopt flexible learning methods	(Jia & Wang, 2012; Wang, 2019)	2
28	Employing workers with diverse skills applicable in alternative jobs	(Beltrán-Martín et al., 2008; Yang & Gan, 2021)	2

To finalize and confirm the localized components of flexible human resource management in Iraq's manufacturing sector and determine the importance of each component, the Delphi method was used. The Delphi process was completed in three iterations, summarized for brevity. The aim of the first stage was to identify significant indicators and extract expert-suggested indicators. At this stage, the relevance of the identified indicators to the study was examined, and two indicators, "adjusting guidelines for different employee groups in a complementary way" and "encouraging employees to exchange views with individuals and departments," were excluded due to an agreement ratio

below 0.50 (0.35 and 0.45). No new indicators were suggested by the experts, so 26 remaining indicators were examined in the second stage. In the second stage, experts were asked to rate the importance of each indicator using a 5-point Likert scale. The Kendall's W statistic was used to confirm or reject the initial indicators, yielding a coordination coefficient of 0.43 with a significance level of 0.000 (Table 2). This table shows that the null hypothesis, indicating random (non-congruent) opinions, is rejected. Therefore, the identified indicators for flexible human resource management are validated by the experts.

**Table 2**

*Kendall's Coordination Coefficient in the Second Stage of Delphi*

Number	Kendall's W	Chi-Square	Degrees of Freedom	Sig
20	0.427	213.741	25	0.000

In the third stage, the confirmed indicators were content-analyzed and categorized into six groups based on their central themes. Based on the content of the indicators, these components were named "operational flexibility," "individual flexibility," "skill flexibility," "behavioral flexibility," "temporal flexibility," and "relational flexibility." The first to sixth components respectively contained 7, 5, 4, 4, 4, and 2 indicators (Table 3). To assess

the experts' agreement with the naming and placement of indicators, the non-parametric "one-sample sign test" with a critical value of 3 was used. Since the significance level of all indicators was 0.000, less than 0.05, their significance was confirmed. The final results of this stage were used to design the researcher-made questionnaire to measure "flexible human resource management."

**Table 3**

*Validation of Flexible Human Resource Management Components in the Third Stage of Delphi*

Component	Indicator	Sign Test = 3	p-value
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		Negative Difference	Positive Difference
Operational Flexibility	Changing HR tasks and activities with changing business scenarios	18	0
	Making rapid and continuous changes in HR activities to keep up with work demands	18	0
	Combining and developing employees' abilities to be appointed to different jobs or departments	20	0
	Flexibly adjusting payroll costs	18	0
	Quickly and effectively adapting to environmental changes through HR activities	20	0
	Reinforcing employees to adopt flexible learning methods	16	0
Individual Flexibility	Implementing methods to measure and simplify work to improve performance	20	0
	Encouraging employees to volunteer to identify the causes of problems	20	0
	Quickly teaching employees how to perform a specific task when they are unable to do so	19	0
Skill Flexibility	Training employees to take on responsibilities related to other jobs	20	0
	Rewarding employees for punctuality in performing duties	18	0
	Training employees to quickly learn new procedures and processes introduced in the job	15	0
	Enhancing employees' abilities to increase the variety (breadth) and extent (depth) of new skills	20	0
	Encouraging employees to continuously update their skills and abilities	20	0
	Predicting the skill needs for future tasks by employees	20	0
Behavioral Flexibility	Employing workers with diverse skills applicable in alternative jobs	20	0
	Training employees to recognize appropriate behaviors in uncertain and ambiguous conditions	20	0
	Encouraging employees to share information and learn from each other	20	0
	Reinforcing employees' proactive behaviors to adapt to abnormal conditions and events	17	0
Temporal Flexibility	Empowering employees to change short-term behavioral habits to meet environmental demands	17	0
	Adjusting workload with flexible working hours or part-time employees	19	0
	Transferring and assigning employees to more qualified jobs in a short period	18	0
	Training and developing employees to perform specific tasks in a short period	20	0
	Adjusting the number of employees (such as temporary or contingent workers) to quickly and effectively adapt to workload and demand changes	15	0
Relational Flexibility	Providing quick feedback to employees on the effectiveness of their new skills	15	0
	Holding regular meetings to share experiences and work processes applicable in other parts of the organization	19	0

Field data collection from 238 respondents revealed that the majority of respondents were male (182 individuals, 76.5%), the age group of 41-50 years was the most common (92 individuals, approximately 40%), the majority had 21-25 years of work experience (79 individuals, over 33%), and 119 respondents had a master's degree (50%).

Before evaluating the structural model, it was necessary to examine the significance of the factor loadings of various questionnaire indicators in predicting the related items (Table 4). As shown in this table, in the estimated models, all indicator factor loadings in predicting the related factors are greater than 0.50. This indicates the adequacy of the factor loadings. Additionally, the average variance extracted (AVE) values for all sub-constructs or factors are greater than 0.50, showing that the correlation of each construct's indicators with its respective construct is at an acceptable

level. In other words, the convergent validity of the collected data for the indicators is confirmed (Fornell & Larcker, 1981). The basis for the significance of the indicators was that the significance number should be greater than 1.96. It is evident that the significance number of all indicators is greater than the critical value of 1.96. Accordingly, none are excluded from the analysis process. The obtained reliability coefficients for the research variables after examining validity are also reported in this table. Given that the Cronbach's alpha coefficients for all research variables are greater than 0.90, it can be said that the research data have ideal reliability, and the reliability of the data is confirmed. Overall, the accuracy and validity of the survey data were confirmed and formed the basis for modeling and hypothesis testing.

**Table 4***Survey Data Validity Check Results*

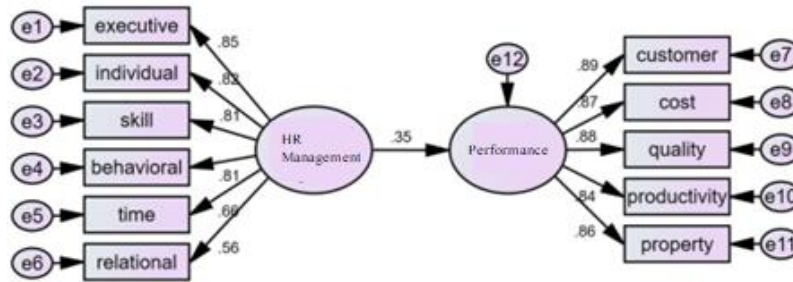
Indicator	Variable	Component	Factor Loading	t-value	AVE	Alpha		
i1	Flexible HR Management	Operational Flexibility	0.777	-	0.580	0.953		
i2			0.753	12.33				
i3			0.669	10.71				
i4			0.739	12.05				
i5		0.822	13.73					
i6		0.690	11.10					
i7		0.865	14.65					
i8		Individual Flexibility	0.822	-			0.622	
i9			0.757	13.10				
i10			0.813	14.46				
i11	Skill Flexibility	Skill Flexibility	0.724	12.33	0.617			
i12			0.823	14.73				
i13			0.748	-				
i14			0.784	12.02				
i15		0.824	12.68					
i16		0.786	12.05					
i17		Behavioral Flexibility	0.799	-		0.614		
i18			0.815	13.58				
i19	Temporal Flexibility	Temporal Flexibility	0.818	13.64	0.553			
i20			0.698	11.23				
i21			0.738	-				
i22		0.785	11.26					
i23		0.762	10.96					
i24		0.688	9.93					
i25	Organizational Ambidexterity	Relational Flexibility	0.815	-	0.665			
i26			0.817	10.18				
i27			Exploration	0.862		-	0.794	0.978
i28				0.888		19.29		
i29				0.927		21.15		
i30		0.898		19.71				
i31		0.883		19.08				
i32		Exploitation	0.889	19.33		0.814		
i33			0.910	-				
i34			0.909	23.40				
i35	0.912		23.58					
i36	0.891		22.13					
i37	Operational Performance	Customer Service	0.904	23.06	0.687	0.946		
i38			0.889	22.03				
i39		Cost Management	0.852	-			0.693	
i40			0.806	15.18				
i41			0.874	-				
i42		Quality	0.789	14.82			0.668	
i43			0.785	-				
i44		Productivity	0.849	14.54			0.735	
i45	0.846		-					
i46	0.869		16.10					
i47	0.811		-	0.654				
i48	Asset Management	0.807	13.98					

Fit Indices for Flexible HR Management: CMIN = 492.850; DF = 284; CMIN/DF = 1.735; CFI = 0.946; PGFI = 0.702; RMR = 0.038; RMSEA = 0.056

Organizational Ambidexterity: CMIN = 87.468; DF = 53; CMIN/DF = 1.650; CFI = 0.990; PGFI = 0.638; RMR = 0.017; RMSEA = 0.052

Operational Performance: CMIN = 65.757; DF = 25; CMIN/DF = 2.630; CFI = 0.977; PGFI = 0.894; RMR = 0.022; RMSEA = 0.083

**Figure 1***Survey Data Validity Check Results*



To test the hypothesis of the effect of flexible human resource management on operational performance, structural equation modeling was used (Figure 1), and the hypothesis of the moderating effect of organizational ambidexterity on the relationship between the two mentioned variables was examined using hierarchical regression analysis. Therefore, the estimation and evaluation stages of these models and the subsequent hypothesis testing are described.

Most values below 5 are considered acceptable for the chi-square/degrees of freedom ( $\chi^2/df$ ) index, and values below 3 are satisfactory. The value of this index for the research model was 2.29. The PGFI index, one of the parsimonious indices, has a value greater than 0.50 indicating good model fit. The value of this index for the research model was 0.60. Similar to the goodness-of-fit index, values greater than 0.80 for the comparative fit index (CFI) are acceptable. The value of this index for the research model was 0.96. Acceptable models have a value of 0.09 or smaller for the root mean square error of approximation (RMSEA) and the root mean square residual (RMR). Models with values greater than 0.10 are considered poorly fitting. The values of the RMR and RMSEA indices for the research

model were 0.02 and 0.07, respectively, indicating an acceptable model fit. Based on this, the first hypothesis was tested. According to the model, flexible human resource management had an effect of 0.35 on operational performance. Since the significance number of this coefficient was 5.13 and greater than 1.96, the related hypothesis is confirmed.

To test the moderation hypothesis, the moderated regression method was used due to the nature of the variables. In this method, independent and moderating variables are first standardized and entered as predictor variables, and in the second step, the interaction variable (the product of the independent variable and the moderator) is added. The standardized beta coefficient of the interaction variable indicates the strength of the moderating effect (Table 5). The significance of the changes in the F-statistic can confirm the presence of the moderator variable. The ANOVA table also shows that both the main and moderated regression models are significant, allowing for the examination of the moderation hypothesis. As indicated, the moderation coefficient of organizational ambidexterity was 0.22, and since its significance number (4.94) was greater than 1.96, the moderation hypothesis is confirmed.

**Table 5**

*Results of the Moderating Effect of Organizational Ambidexterity*

Stage	Independent Variable	Dependent Variable	$\beta$	t-value	R <sup>2</sup>	Change Statistics	ANOVA
						R <sup>2</sup> Change	F Change
1	Independent Variable	Performance	0.480	11.35	0.601	0.601	177.134
	Moderating Variable		0.726	17.17			
2	Independent Variable	Performance	0.412	9.66	0.639	0.038	24.463
	Moderating Variable		0.611	13.15			
	Independent Variable × Moderating Variable		0.228	4.94			

Table 6 summarizes the results of the hypothesis testing. Based on the results in this table, human resource management has a direct and significant impact on the operational performance of manufacturing companies in

Iraq, and organizational ambidexterity positively and significantly enhances the effect of flexible human resource management.



Table 6

Summary of Hypothesis Testing Results

Hypothesis	Direct Path	Coefficient	t-value	Result
1	Flexible Human Resource Management → Operational Performance	0.35	5.133	Hypothesis Confirmed
2	Ambidexterity → (Flexible Human Resource Management / Operational Performance)	0.22	4.946	Hypothesis Confirmed

#### 4 Discussion and Conclusion

The results of the qualitative section of the research identified and confirmed six components of flexible human resource management: operational, individual, skill-based, behavioral, temporal, and relational flexibility. The results of the quantitative section also confirmed the direct and moderating hypotheses. Therefore, the primary goal of the research, which was to conceptualize flexible human resource management for manufacturing companies in Iraq and to examine its main and moderated effects on operational performance, was achieved.

Regarding the obtained results, there is little possibility for comparison with Persian studies because, as previously mentioned, these studies have not identified the dimensions and components of flexible human resource management but have mostly focused on identifying and categorizing the factors influencing this type of management system. Unlike domestic research, none of which examined the components of flexible human resource management, foreign research somewhat identified dimensions of flexible human resource management. For example, Laidi et al. (2021) included four aspects in this management system: human resource planning flexibility, flexible employees, wage system classification, and flexible working hours. However, no mixed-method research was found that examined the impact of flexible human resource management components after identifying these components. Therefore, this research also covered this research gap by assessing the impact of the identified components on the operational performance of companies. Additionally, the operational performance indicator considered in this study has rarely been examined in other studies. This study covered this deficiency, as only in the research by Laidi et al. (2021) was the impact of flexible human resource management on operational performance explicitly and implicitly examined (Laidi et al., 2021). Therefore, it can be said that the qualitative findings of this study are unique, and its quantitative findings align with past studies (Laidi et al., 2021).

Theoretically, these results align with the resource-based theory. All identified types of flexibility—operational, individual, skill-based, behavioral, temporal, and relational—indicate an effort by the organization, employees, or both to preserve existing physical and psychological resources to increase human resource management flexibility. Furthermore, it is argued that this management system, by enhancing flexibility in human resource management, protects functional tasks and resources in line with employees' operational performance. Organizational ambidexterity also strengthens these resources by simultaneously exploring and exploiting collective learning capabilities. Based on the results obtained, the following recommendations can be offered to managers of manufacturing companies in Iraq to establish a stronger link between their human resource management system and operational performance.

Based on the qualitative results of the research, it is suggested that relevant managers consider all types of flexibility—operational, individual, skill-based, behavioral, temporal, and relational—when implementing maximum flexibility in the human resource management system. This way, flexibility indicators will be simultaneously implemented in executive processes, individual capabilities, job skills, behavioral habits, time frames, and communication procedures. Otherwise, human resource management flexibility in the true sense will not occur. Additionally, given the conceptual differences in the scope of flexibility components, it is recommended that managers initially focus more on operational and individual flexibility, which have broader scopes. Moreover, managers in Iraq's manufacturing sector can use the localized model of flexible human resource management to align human resource strategies with business-level strategies, design training and empowerment programs, and develop recruitment and selection worksheets during the hiring process. Based on the quantitative results of the research, which showed that flexible human resource management impacts operational performance, it is suggested to design employee performance evaluation indicators in the traditional human resource system based on a combination of operational and

flexibility indicators. This way, the role of the performance management system and its evaluation subsystems in improving organizational performance of companies will increase. Additionally, to improve the company's operational performance to the highest level, it is suggested to use all identified flexibility indicators for designing or redesigning other organizational systems, such as suggestion and complaint systems, archiving, and training. This way, the prevalence of flexibility in human resources throughout the organization will comprehensively impact operational performance.

Finally, considering the confirmed moderating effect of organizational ambidexterity, it is suggested to establish direct connections between organizational units like the research and development unit, which engage with the organization's learning capabilities, and the human resource unit. This way, the interaction between flexibility and learning will increase the organization's ability to explore and exploit innovation. Moreover, since the more flexible an organization is, the greater its ability to explore and exploit simultaneously, it is recommended to involve human resource managers in senior management decision-making and policy-setting to improve coordination and operational performance by integrating human resources (flexible human resource management) with senior management (organizational ambidexterity).

In addition to the practical recommendations above, the following suggestions are offered to other researchers based on the research limitations. Given that the goal of this study was not to rank the identified components of flexible human resource management, this was not done, and therefore, their differential effects on operational performance were not examined. Other researchers can perform appropriate statistical tests to determine the priority of flexibility components and create more clarity in the concept of flexible human resource management. Furthermore, they can estimate the separate impact of each of these components on the operational performance of the target company to specify the priority of action and the level of investment related to human resource flexibility for the company's management. Moreover, since this research examined the moderating role of organizational ambidexterity, it does not provide extensive insights into the facilitating role of this organizational capability. Other researchers are suggested to simultaneously examine the mediating role of this variable along with its moderating role based on implicit concepts of theories such as the resource-based view to achieve a more comprehensive conceptual model presented in this research.

Finally, it is worth mentioning that the following limitations should be considered when applying the above practical and research suggestions.

Every research has limitations that constrain the generalizability of its results and the applicability of its suggestions. One of the most significant limitations is the research context or case study, which this study attempted to cover in the first section by systematically reviewing the literature and presenting the identified factors to human resource management experts in Iraq's manufacturing sector. However, since this research was conducted in Iraqi manufacturing companies, data collection was somewhat tailored to a specific type of organization, and different results may be obtained in other types of organizations. Another limitation is that the study used questionnaires and self-reports instead of objective data to measure organizational variables such as operational performance. Another related limitation is the large number of indicators in the research conceptual model (considering the identified indicators and components for flexible human resource management), which may have affected the quality of participant responses. However, validation procedures were subjectively and objectively applied in both parts of the research, ensuring the validity of the expert and field data.

### Authors' Contributions

All authors have contributed significantly to the research process and the development of the manuscript.

### Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

### Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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### Declaration of Interest

The authors report no conflict of interest.

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## Ethical Considerations

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were observed.

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